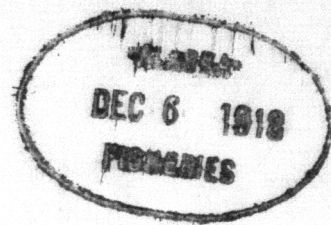


Report of Shirley A. Baker - 1918. R.B.B.

DEPARTMENT OF COMMERCE
BUREAU OF FISHERIES



Camp Lewis, Washington.
November 20, 1918.

The Commissioner of Fisheries,
Washington, D. C.

Following is a report of my last summer's operations and also a summary of conditions existing in Bering sea fisheries, together with a review of incidents arising that may prove of interest to you, all of which is respectfully submitted.

Narrative:

On account of having no assistance until midsummer my time was taken up almost exclusively by Bureau operations of imperative necessity. The fishing fleet arrived very late, due to conditions outlined under other headings of this report, and the summer's work, in consequence, came with a bang. The shortened season also placed the canneries under extra necessities, and it became an evident hardship for them to cooperate with me in supplying the frequent transportation facilities demanded and which they ordinarily place at the disposal of the Bureau of Fisheries representatives with pleasure. Notwithstanding this condition, all of the Bureau's work was taken care of with promptness, the canneries generously volunteering their services whenever possible.

Prohibitive Monuments:

Monuments marking fishing limits in Wood and Nushagak rivers were set by me June 19.

Wood River Census:

The counting expedition, taking the census of salmon entering Lake Aleknagek to spawn, fitted out at the Scandinavian cannery during the middle portion of June and the trip was made

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to the lake runout, where the count is taken, June 21. A special report to your Bureau, which you have doubtless already received covers the work and findings of this expedition.

Patrol Service:

A careful patrol service was maintained in the Wood and Nushagak rivers, the canneries of Nushagak bay were visited at regular intervals, and a trip was made covering the fishing and packing operations of the Kvichak, Naknek and the Egagik rivers. All salteries on those waters were covered. The cannery and saltery operating on the Ugashik river were not visited as it was impossible to secure transportation to this point during my visit at Naknek.

Arrival of Fishing Fleet and Packers:

This season, the fishing and packing fleet of Bering sea, meeting with vicissitudes out of the ordinary, arrived at destinations a month or more late.

The fleet safely negotiated Unimak pass, and entering Bering sea on time, found the waters of that ocean apparently free of ice. Proceeding eastward towards Bristol bay, isolated bergs were encountered followed quickly by sporadic groups and then by vast fields of ice that grew, as the vessels advanced under fine sailing weather, into an impassable jam reaching scores of miles from the ocean shores. As narrated elsewhere in this report, it developed that a monumental ice jam stretched across the sea from horizon to horizon, with sea lanes opening here and there produced by currents, tides, and wind action on the ice pack.

With characteristic daring the units of the packer fleet and the fishing fleet pushed boldly into these sea lanes, hoping to cruise through them and reach open water beyond and thus make their objectives. One after another all the vessels were quickly caught in the pack and for weeks on end became the playthings of winds, sea currents, and ice jams. Nearly every vessel suffered more or less injury, many of them frequently being in highly hazardous situations. Efforts to extricate themselves were in most cases futile, as an eastwardly driving wind made it hard to claw off, even though a sailing vessel were free of the pack. But the rapid advance of one of the warmest summers known in many years in the Bering sea world,

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coupled with wind and tidal action and other disintegrating forces, eventually cut the ice fields to pieces and freed the imprisoned vessels. (This ice jam and resultant injuries to vessels are referred to under separate and definite headings in this report.)

The first vessel to break through the ice barrier was the steamer Akutan, belonging to the Alaska Portland packers, which steamed up Nushagak bay May 24--exactly a month later than that steamer arrived last season when it was also the first vessel to put in an appearance.

For weeks running into months the ice pack had stood up all along the entire seaward horizon, off Itoline Point and Cape Constantine, having the appearance at a distance of an immense stationary fog, and this, taken in conjunction with the absence of the long overdue fishing fleet, resulted in a curious feeling of isolation throughout the Bristol bay winter colony, and the glad sight of this noble vessel pluckily plowing her way up the broad bay to her anchorage gave many of us that had been watching the sea for weeks cheering sensations that will never be forgotten.

Thereafter other ships came stringing in until by June 15 the most of the fleet was riding at anchor in the Kvichak river, off Naknek and in Nushagak bay waters. June 25 saw all ships in ports.

Salmon Runs:

Salmon runs in Bristol bay waters were late this season. For this two leading causes are advanced. The first was the prodigious ice jam along the coast of Bering sea. A secondary cause was the almost complete absence of stormy weather. Winds and storms, it is conceded, always speed up salmon runs in Bering sea, while calms retard them.

King Salmon Run:

The king salmon, which is the first of the salmon family to run in Bering sea, was three weeks late in putting in an appearance in Nushagak bay waters, the first of these fish not being caught until June 14. Ordinary seasons see the first catches of kings made the last week of May, or even earlier. The run on the Nushagak was light but steady and ended July 10. The Kvichak river run was not as heavy as that of the Nushagak, and the run in the Naknek river was

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still lighter than that of the Kvichak.

Chinook runs at Egagik and Ugashik were heavier, and also earlier, and there was a good pack of this fish at both those places.

Red Salmon Run:

The red run began showing in Bristol bay waters June 20, but continued light for ten days. July 1 fishermen made good catches and the same day the main red run struck Ugashik and Egagik. Two days later the run reached the Kvichak and the Naknek rivers. On July 3, 4, 5, 6, 7, and 8, the run was at its height in Nushagak bay waters.

The weather was so fine and calm over the Bering sea world that the fish played on the fishing banks near the mouth of Nushagak river until late in the running season, the river runs not showing any volume worth the name until July 8.

During the first part of the red salmon run this season the individual fish was over-large, as remarked in my presence many times by both fishermen and cannerymen. Throughout the remainder of the run sizes were normal, comparing the fish with sizes of red salmon of other seasons.

Dog Salmon Run:

The run of dogs slightly antedated the red run, and continued in force until the end of the run of reds. The run had no distinctive differentiation from the normal run of dogs in these waters.

Humpback Salmon Run:

The run of humpbacks in Bristol bay waters this season was heavier than the usual run of this fish there, but the individual fish, according to cannerymen and fishermen, was smaller than seen in Bering sea humpback runs in many years. The fish were so small that they easily passed through the mesh of gill nets, and it required thirty to forty-five of them to pack a case. I heard no theory advanced and I myself could discover no reason for this deficiency in size.

Silver Run:

Silvers in Bristol bay waters fell down in volume of run this season, but this lack of numbers was partly made up by the increased size of the individual fish, if cannerymen and fishermen who profess to follow fluctuations and characteristics of the various runs are credible authorities.

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These fish were running freely when the draft board called me out of Bering sea waters.

Size and Quality of Salmon Pack:

The Bering sea cannery pack this season was normal in size and quality. Very favorable weather conditions and a steady supply of fish resulted in the pack being secured without incident, and also made it possible for the ships to sail south at about the usual time, notwithstanding the extreme lateness of the commencement of the season's work.

Catches and Prosperity of Fishermen:

The present season was one of the best for financial gain which fishermen operating in Bristol bay region have ever experienced. If actual facts were known it was actually the red letter or record-breaking season in this respect. Some of the fishermen made as high as \$1,700.00, which, with the bonus of run money, gave them a tidy sum for their summer's work. Due to the prevailing fine weather and the ease with which big catches were made, all canneries placed boats on the 1,200-limit July 5, and the restriction was not lifted until July 15. There were a few days during the heavy run between July 5 and July 12 when the canneries placed their boats on a 500, 600, (and some on an 800) limit; but by the fishermen's agreement they were to receive pay for 1,200 fish.

In the matter of physical wear and tear the season was very easy on the fishermen, there being scarcely any weather hardships endured after the ice-bucking period was passed at the commencement of the season.

Fishing Operations of Natives:

Eskimos and Keenai natives did a large amount of fishing and were very prosperous this season. Catches by this class of fishermen were larger and better paid for than ever before, and there is more prosperity this fall in Dillingham, Kanakanak, Koggiung, Naknek, Egagik, Ugashik, and Igushik and other villages of the Bering sea region than in years.

The salting of fish for their own consumption was undertaken for the first time by the natives this summer. I visited the natives operating set nets and urged each family to salt two or three barrels of salmon for their own use and not depend entirely upon dried fish as they usually do. Here-

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tofore the native has always dried fish both for dog feed and for his own use. Due to the famine-stricken condition prevailing last winter in most native villages, I seriously took up with them last spring the matter of more adequately provisioning themselves. The salting of salmon was the method propounded as one of the easiest ways to stave off famine. Rather to my surprise they were friendly to the proposition and today there is a great deal of salt salmon stored in the huts and igloos of natives in the Bristol bay region.

Weather Conditions:

The weather during the past season in the Bering sea region was quite out of the ordinary. There were probably more hours of sunshine--and hot sunshine at that--more warm, dry, summery weather, in fact, and less rain in the Bristol bay country than in years. Old-timers among cannerymen and fishermen declared it was the most open, warm summer they had ever experienced there.

Great Ice Barrier:

Notwithstanding the very warm and fine summer, an ice pack of phenomenal size congested on the shores of Bering sea, reaching, I am informed, from the neighborhood of Bering straits along the ocean shores southward to Port Moller. It formed the most formidable ice jam seen in the North in years, and was caused by a persistently blowing eastward wind pushing the ice of Bering ocean on the continental coastline and holding it there. Early in the spring monolithic bergs began grounding in shallow water far at sea, and new aggregations kept constantly drifting in until the jam was complete. This jam was so distant that to a seaward gazer it appeared to be a fog at rest across the ocean horizon, and strange as it may seem, we did not clearly understand what it was until ships broke through the barrier and brought the news into Nushagak bay. It was certainly a stupendous natural phenomenon. As elsewhere narrated, the packer fleet found this jam almost impregnable, and weeks were spent and dangers and vicissitudes endured by these seafarers in making their ice-locked destinations.

Loss and Destruction of Vessels:

The sailing bark Tacoma, belonging to the Alaska Packers' Association, with a cargo aboard of cannery supplies and equipment valued at \$300,000.00, was crushed in the ice off Itoline Point May 19 and sunk about two hours later. The one hundred or more men aboard took to the ice and were all, with one exception, later rescued by cannery ships and by the Bureau of Fisheries SS. Roosevelt.

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One man died from the effects of weather hardships and exhaustion before he could be rescued from the ice pack.

The SS. Kvichak was damaged by having one propellor torn off.

The Star of Zealand had her rudder shorn off by the ice.

The barkentine Flint was shoved on the beach by the ice pack and later came off with damages.

The ship Centennial had her rudder torn off.

The schooner Burroughs had one of her propellers torn off and her rudder bent.

The ship St. Nicholas had her rudder torn off, and the ship Star of France had her rudder badly damaged.

Practically every vessel of the fleet suffered at least some damage either from being crushed, jammed or sprung by the pack, or being boosted bodily on the beach.

Casualties:

During the season there were only two violent deaths among the fishermen and cannery employes. One life lost has already been referred to as being due to exposure on the ice pack following the sinking of the sailing bark Tacoma. The other death was caused by a fisherman accidentally falling through the hatch while aboard the ship Indiana discharging freight, which resulted in his death two days later.

Ordinary seasons in the Bristol bay region show a death toll from drowning alone of from three to seven men among the fishermen. The continued fine weather, rarity of winds, and placid seas simplified and made fishing operations so safe that hazards did not enter into the count of difficulties faced.

Infractions of Regulations:

There were no infractions of regulations governing fishing and canning operations in the Bristol bay region this summer.

Fish Destroyed:

For the first time in many, many seasons there was

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some destruction of fish in canning operations in Bristol bay by the phenomenally hot summer weather. The temperature went as high as 90 degrees (Fahrenheit), which some claimed broke Bering sea records for hot weather. Crews bringing in scow loads of salmon found, upon arriving at the canneries, that fish on the top were all cooked and so soft they could not be packed. There were several days when the top layer of fish would not keep twenty-four hours.

Preventitive measures cut down the number of fish open to such deterioration.

New Canneries:

I have already forwarded for your information a topical letter covering new packing development operations. Briefly, however, one new cannery, constructed by the Northwestern Fisheries Company on the Naknek river, was in operation this season, its initial pack amounting to 46,000 cases. The Alaska Portland Packers' Association are building a new cannery on the Naknek river, and the Alaska Packers' Association are doing likewise at Ugashik. Both these plants will have two lines with provisions allowed for increase, and both are expected to be in operation next season. The Pacific American Fisheries Company contemplates the construction of two new canneries--one at Naknek and the other at Egagik. These operations forecast a decided increase in capacity for pack in the near future of the Bristol bay region, which, in turn, emphasizes the importance of conservation of the salmon runs, upon the continuity, regularity, and size of which the prosperity of all the canneries depends.

Canneries in Operation in Bristol Bay:

The number of canneries in operation now in Bristol bay and its tributaries is as follows:

<u>Location</u>	<u>No. of Canneries</u>
Nushagak Bay.....	7
Wood River.....	1
Kvichak River.....	6
Naknek River.....	6
Egagik River.....	2
Ugashik River.....	1
TOTAL.....	23

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Salting Stations:

Salting stations, now operated in Bristol bay waters, are distributed as follows:

<u>Location</u>	<u>No. of Stations</u>
Nushagak Bay (Igushik River)....	3
Kvichak River.....	3
Ugashik River.....	<u>1</u>
TOTAL.....	7

Set or Stake Nets:

Following is the number of set or stake nets in operation in Bristol bay waters during the past summer:

<u>Location</u>	<u>No. of Nets</u>
Wood River (Including Wood River Flats).....	59
Nushagak River Proper.....	41
Nushagak Bay Waters.....	197
Igushik River.....	46
Snake River.....	31
Kvichak River (Between Branch River above Koggiung and the mouth of river).....	174
Naknek River Proper.....	81
Egagik River.....	<u>103</u>
TOTAL.....	732

The foregoing list does not include the set nets on the Ugashik river, which, as elsewhere stated, I was unable to reach during this season.

Traps:

The only fish traps in the Bristol bay region are the four operated by the Alaska Packers in Nushagak bay waters and the three operated by the Alaska Portland Packers, also located in the waters of Nushagak bay. These traps made only moderate catches this season, due to the fact that the traps were not allowed to fish during the time fishing boats were placed on

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limit.

Proposed New Method of Securing Catch on Nushagak:

Not advisable.

An innovation in methods in securing the catches for the canneries operating in Bristol bay is being considered by the salmon packers. It is proposed to locate about three traps in Wood river, four in Nushagak, and about ten in Nushagak bay waters,--all of which are to be operated under Bureau of Fisheries supervision, provided the Bureau approves of the plan. The catches from these traps, (according to the plan, which is not yet worked out in sufficiently definite or workable detail to be submitted to the Bureau,) would be divided among the canneries, the allotment to each cannery being based on its capacity for pack. The packers anticipate that plenty of fish would be so provided for all canneries now operating on the Nushagak to get their pack.

Advantages forecasted for the proposed new method are set forth as follows:

1.

It would substitute cooperation for competition in making catches for canneries.

2.

It would eliminate the great waste of gill-netted fish, which, by present methods of fishing, escape nets in numbers after having been injured and die without spawning.

3.

It would give immunity from labor troubles with fishermen, which, under present methods, frequently seriously menace the pack.

4.

It would enable the packers to operate constantly and with less cost during the running season and give a quicker get-away at the end of the season.

5.

It would lessen cost of production.

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6.

Government supervision would insure sufficient escapement into Wood river lake to provide a spawning volume of adequate proportions to guarantee keeping the run at its normal level.

Recommendations:

The following rivers should be closed to commercial fishing:

The Kvichak river should be closed two miles above Koggiung proper, where the river begins to narrow.

The Naknek river should be closed from the north side, between Northwestern Fisheries Company to the Alaska Packers' Association cannery (Diamond-O) on the south side.

The Egagik and Ugashik rivers should be closed at a point seven miles inland. Between the seven-mile limit thus established and the sea, fishing boats operating in that vicinity could find refuge in stormy weather, as the waters thereabouts are very rough and there are no havens other than the river.

The salmon run on these streams has been good for the past three years. Previously, it was poor. New canneries are now under construction on some of these streams, and the additional fishing requisite to get the pack for these new elements will place too heavy a toll upon the runs in these rivers unless ample provision is made for spawning escapement.

In view of the near approach of what will likely prove intensive fishing operations in the rivers flowing into Bristol bay, a thorough investigation and survey of conditions there is imperative.

It is highly essential for the benefit of the service that a staunch, seaworthy launch be placed at the disposal of the representatives of the Bureau of Fisheries covering the Bering sea cannery district. This launch should be at least fifty feet long, and equipped with nothing less than a 40-h.p., medium high speed Standard or Atlas engine. Cannery operations

*note Dr. Bullert
on the 3/9/14.
city to Washington
MDD*

Launch

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Extract /
are being extended every year, as referred to in a topical letter to your office covering new packing development operations, and to cover the different operators and make any inspection worth the name requires the use of a very strong, comfortable launch with a cruising radius of several hundred miles. Without such a vessel the Fisheries representatives are often completely prohibited from making visits to districts which they feel urgently require supervision.

Extract //
It is very necessary that Nushagak and Wood rivers be kept closed from commercial fishing, as in the past, and that a constant patrol be maintained in both rivers. Therefore, there should be placed at the disposal of the representatives of the Bureau of Fisheries for this service a small, strong, seaworthy launch,--say about thirty-two or thirty-five feet long, and equipped with nothing less than a 10-h.p., medium heavy duty Standard or Atlas engine. This launch should not draw more than two and a half feet of water for this patrol service.

U.S.F.S. Roosevelt, Capt. Hans Bierd:

This report would be incomplete without reference to the very effective service of the Bureau of Fisheries Steamer Roosevelt, Captain Bierd. Among cannerymen and in fishing circles there is already the most appreciative comment on the devotion to duty and the high order of the service rendered by the captain and crew of this steamer during the long weeks that the fishing fleet was fast in the ice last spring. Many of these vessels were in great distress, the crews and hundreds of cannery employes aboard them constantly being in highly disturbed frames of mind owing to the manifest hazards of the environment. Under these conditions and in the face of great elemental difficulties, Captain Bierd and his crew worked almost night and day for days in breaking through the ice around and in extricating such ships. When the bark Tacoma was crushed and sunk, the Roosevelt rescued twenty-three of the men aboard after they had drifted far out to sea on a large field of ice. On all sides I heard nothing but commendation and approval of this daring seaman and his efficient crew.

Shirley A. Baker

Warden, Alaska Service.